

CLAIMS

What is claimed is:

1. A system comprising:
 - a compressor receiving fluid from a low-pressure side of a circuit and outputting fluid to a high-pressure side of said circuit;
 - a motor drivingly connected to said compressor;
 - at least one high-side sensor operable to measure fluid properties of said high-pressure side of said circuit;
 - at least one current sensor operable to monitor a current drawn by said motor; and
 - processing circuitry receiving fluid property and current information from said at least one high-side sensor and said at least one current sensor and processing said information to determine a system operating condition.
2. The system of Claim 1, wherein said at least one high-side sensor is a pressure sensor operable to measure a pressure of said fluid flow from said compressor.
3. The system of Claim 2, wherein said pressure sensor is disposed proximate to a discharge port of said compressor.

4. The system of Claim 1, wherein said at least one high-side sensor is a temperature sensor operable to monitor a temperature of said fluid flow from said compressor.
5. The system of Claim 4, wherein said temperature sensor is a thermistor.
6. The system of Claim 4, wherein said temperature sensor is disposed in a heat exchanger fluidly coupled to said compressor.
7. The system of Claim 6, wherein said heat exchanger is a condenser.
8. The system of Claim 6, wherein said heat exchanger is an evaporator.
9. The system of Claim 1, further comprising a low-side sensor operable to measure fluid properties of a fluid flow into said compressor.
10. The system of Claim 9, wherein said low-side sensor is a pressure sensor operable to monitor a pressure of said fluid flow into said compressor.
11. The system of Claim 10, wherein said pressure sensor is disposed proximate to an inlet of said compressor.

12. The system of Claim 1, further comprising an ambient temperature sensor, said processing circuitry receiving ambient temperature information from said ambient temperature sensor and processing said information to determine said system operating condition.

13. The system of Claim 1, further comprising a power interruption device operable to selectively restrict power to said motor in response to a signal from said processing circuitry.

14. The system of Claim 1, further comprising a diagnostics system in communication with said processing circuitry to log and store said system operating condition.

15. The system of Claim 1, further comprising a plurality of light-emitting devices, said processing circuitry outputting condition signals to said light-emitting devices to indicate said system operating condition.

16. The system of Claim 1, wherein said processing circuitry is operable to communicate said system operating condition to an intelligent device.

17. The system of Claim 1, wherein said processing circuitry is operable to store a baseline operating condition, said system operating condition including a comparison of said baseline operating condition to said information.

18. A compressor comprising:

a compression mechanism receiving fluid from a low-pressure side of the compressor and outputting fluid to a high-pressure side of the compressor;

a motor drivingly connected to said compression mechanism;

at least one high-side sensor operable to measure fluid properties characteristics of the compressor;

at least one current sensor operable to monitor a current drawn by said motor; and

processing circuitry receiving fluid property and current information from said at least one high-side sensor and said at least one current sensor and processing said information to determine a compressor operating condition.

19. The compressor of Claim 18, wherein said at least one high-side sensor is a pressure sensor operable to measure a pressure of said fluid flow from the compressor.

20. The compressor of Claim 19, wherein said pressure sensor is disposed proximate to a discharge port of the compressor.

21. The compressor of Claim 18, wherein said at least one high-side sensor is a temperature sensor operable to monitor a temperature of said fluid flow from the compressor.

22. The compressor of Claim 21, wherein said temperature sensor is a thermistor.

23. The compressor of Claim 18, further comprising a low-side sensor operable to monitor characteristics of a fluid flow into the compressor.

24. The compressor of Claim 23, wherein said low-side sensor is a pressure sensor operable to monitor a pressure of said fluid flow into the compressor.

25. The compressor of Claim 24, wherein said pressure sensor is disposed proximate to an inlet of the compressor.

26. The compressor of Claim 18, further comprising an ambient temperature sensor, said processing circuitry receiving ambient temperature information from said ambient temperature sensor and processing said information to determine said compressor operating condition.

27. The compressor of Claim 18, further comprising a power interruption device operable to selectively restrict power to said motor in response to a signal from said processing circuitry.

28. The compressor of Claim 18, further comprising a diagnostics system in communication with said processing circuitry to log and store said compressor operating conditions.

29. The compressor of Claim 18, further comprising a plurality of light-emitting devices, said processing circuitry outputting condition signals to said light-emitting devices to indicate said compressor operating condition.

30. The system of Claim 18, wherein said processing circuitry is operable to communicate said system operating condition to an intelligent device.

31. The system of Claim 18, wherein said processing circuitry is operable to store a baseline operating condition, said system operating condition including a comparison of said baseline operating condition to said information.

32. A method comprising:
- determining base-line operating parameters;
 - generating a high-side signal indicative of high-side compressor operating conditions;
 - generating a low-side signal indicative of low-side compressor operating conditions; and
 - comparing said high-side and low-side operating signals to said base-line compressor operating parameters to determine a system operating condition.
33. The method of Claim 32, further comprising recording and storing said high-side signals and said low-side signals.
34. The method of Claim 32, further comprising sending said low-side signal and said high-side signal to a diagnostic tool.
35. The method of Claim 32, further comprising illuminating a light-emitting device indicative of said system operating condition.
36. The method of Claim 32, further comprising illuminating a light-emitting device when said processing circuitry determines said high-side and low-side signals sufficiently vary from said compressor base-line parameters.

37. The method of Claim 32, further comprising illuminating a light-emitting device when said processing circuitry determines said high-side and low-side signals do not sufficiently vary from said compressor base-line operating parameters.

38. The method of Claim 32, further comprising measuring said compressor base-line operating parameters during installation of said compressor.